Amendments to the Claims

Please amend claim 1 as provided below.

Please cancel claim 15 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for suppressing pathological calcification of the meniscal and articular cartilage matrix in a subject in need thereof, comprising:

administering to the subject ~~contacting the cartilage matrix of a subject in need thereof with~~ an inhibitor of activation and/or activity of zymogen factor (FXIIIa) and tissue transglutaminase (tTGase) in chondrocytes in the cartilage matrix, wherein the inhibitor is A20 or NG-monomethyl-L-arginine acetate (NMMA), thereby suppressing pathological calcification in the cartilage matrix in the subject.

2. (Previously presented) The method according to claim 1, wherein the inhibition of activation is accomplished by blocking production of a member selected from the group consisting of interleukins IL-I, IL-8, nitric oxide donor Noc-12, peroxynitrite generator Sin-1, tumor necrosis factor α (TNFα), and S100 family of proteins.

3. (Previously Presented) The method according to claim 1, wherein the inhibition of activation is accomplished by blocking TNFα receptor-associated signaling factors (TRAFs), TRAF2 and TRAF6.

4. (Canceled).

5. (Previously presented) A method for inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in a chondrocyte, comprising contacting the chondrocyte with an effective amount of an inhibitor of a TNFα receptor-associated signaling factor (TRAF), wherein the inhibitor is A20 or NG-monomethyl-L-arginine acetate (NMMA), thereby inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in the chondrocyte.

6. (Previously Presented) The method of claim 5, wherein the inhibitor is an inhibitor of IL-1, Noc-12, Sin-1, tumor necrosis factor a (TNFα), and/or TNFα receptor-associated signaling factor (TRAFs), TRAF2 and TRAF6.

7. (Withdrawn) The method of claim 5, wherein the inhibitor is a polynucleotide that inhibits tTGase or FXIIIa expression.

8. (Previously Presented) The method of claim 5, wherein the method is performed *in vitro*.

9. (Previously Presented) The method of claim 5, wherein the method is performed *in vivo*.

10. (Previously Presented) The method of claim 9, wherein the chondrocyte is from a chondrocyte-derived cell line.

11. (Previously presented) A method for identifying an agent that inhibits matrix calcification, comprising contacting a chondrocyte *in vitro* with a test agent under conditions for inducing matrix calcification, wherein the chondrocyte expresses zymogen factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase); and

determining the effect of the test agent on activation and/or activity of zymogen factor (FXIIIa) and tissue transglutaminase (tTGase) in chondrocytes of the cartilage matrix, wherein inhibition of activation and/or activity is indicative of a test agent that inhibits matrix

calcification.

12. (Previously Presented) The method of claim 11, wherein the chondrocyte is transfected with a TGase expression vector for expressing zymogen factor FXIIIa or tTGase.

13. (Previously Presented) The method of claim 12, wherein the chondrocyte is from a chondrocyte-derived cell line.

14. (Withdrawn) The method of claim 11, wherein the conditions for inducing matrix calcification include contacting the chondrocyte with an agent that activates and/or increases activity of zymogen factor FXIIIa and/or tissue transglutaminase (tTGase), wherein the agent affects the activity of IL-1, Noc-12, Sin-1, and/or tumor necrosis factor a (TNFα).

15. (Canceled).